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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,431	05/24/2001	Erwin Hudson	WILD 005/00US	2668

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/864,431	HUDSON ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 16 have been considered but are moot in view of the new ground(s) of rejection.

The outdoor unit (ODU) of Buer, which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines or senses if the DC power needed by said amplifier has been applied (See Figure 3).

The forward power detection circuitry of Buer, which comprises telemetry circuitry, has been moved from the ODU and placed in the IDU thus eliminating the need to transmit the telemetry signal from the ODU back to the IDU for analysis and reducing the cable requirement between the ODU and IDU. The forward power telemetry detection continues to be conducted but said detection is conducted in the IDU instead of the ODU (See Figure 2, Figure 3, Section 0011 lines 4 – 7, Section 0031 – 0032).

Aoki teaches a DC current regulator (Figure 3, Column 3 lines 48 – 50, this is a current regulator that provides a constant current).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the current regulator taught by Aoki in the transmission system of Buer for the purpose of producing a stable current

substantially uninfluenced by fluctuations in the power source voltage as taught by Aoki.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11 – 13 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Buer (US 2002/0132580 A1).

Regarding Claim 11, Buer teaches a circuit for regulating an amount of power to be provided to a power amplifier of a transmitter unit of a satellite-based data communications system, the circuit comprising: means for monitoring, in the transmitter unit, an amount of current into the power amplifier of the transmitter unit (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied); and means for limiting the power produced by the

transmitter unit when the amount of current applied to the power amplifier achieves a predetermined threshold (Figure 3, Figure 4, Section 0033 lines 5 – 6, Sections 0034 – 0039, the Automatic Level Control circuit, in conjunction with the Power Detection Algorithm circuit and the current sensor, limits the input power which in turn limits the output power).

Regarding Claim 12, Buer teaches all of the claimed limitations recited in Claim 11. Buer further teaches a transmitter unit that comprises a transmitter/receiver (transceiver) unit (Figure 3).

Regarding Claim 13, Buer teaches all of the claimed limitations recited in Claim 11. Buer further teaches a means for providing to a modem associated with the transmitter unit an indication of a strength of a signal transmitted from the transmitter unit to a satellite; and means for varying the power produced by the transmitter unit in response to the indication of the strength of the signal transmitted from the transmitter unit to the satellite (Figure 2, the RF power detector detects the signal strength of a signal transmitted from the transmitter to the satellite, said power detector sends a control signal to the telemetry interface circuit which then sends a control signal to the Automatic Level Control circuit, which controls the input signal power and consequently the output signal power).

Regarding Claim 16, Buer teaches a method for controlling a level of an input signal applied to a power amplifier of a transmitter unit of a satellite-based telecommunications system, the method comprising: monitoring, within the transmitter unit, a direct current into the power amplifier (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC

power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied) to determine when the direct current exhibits a predetermined characteristic (Figure 4, Section 0036, Section 0039 lines 12 – 17, when said maximum current point is observed the amplifier reaches the P1 dB compression point), and limiting the level of the input signal applied to the power amplifier when the direct current exhibits the predetermined characteristic (Figure 3, Figure 4, Section 0033 lines 5 – 6, Sections 0034 – 0039, the Automatic Level Control circuit, in conjunction with the Power Detection Algorithm circuit and the current sensor, limits the input power).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buer (US 2002/0132580 A1) in view of Matsumoto et al. (US 2003/0102924 A1).

Regarding Claim 1, Buer teaches a method for controlling an amount of power that may be applied to a power amplifier of a transmitter unit of a satellite-

based data communications system method comprising: delivering a transmission signal from a satellite modem to the transmitter of the satellite-based data communications system (Figure 3, Section 0029 lines 1 – 5, Section 0030 lines 1 – 3, Section 0033 lines 1 –2); monitoring, at the transmitter unit, a direct current of an input signal applied to the power amplifier of the transmitter unit (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied) to determine when the direct current of input signal applied to the power amplifier exhibits a predetermined characteristic (Figure 4, Section 0036, Section 0039 lines 12 – 17, when said maximum current point is observed the amplifier reaches the P1 dB compression point); in response to control signals received from a selected element of the satellite based data communications system (Figure 3, the control signals are provided by the DC current sensor and the Power Detection Algorithm circuit, which are elements of the satellite based system), allowing for increased input signal power to be applied to the power amplifier of the transmitter unit so long as the direct current of the input signal applied to the power amplifier does not exhibit the predetermined characteristic (Figure 3, Figure 4, Sections 0034 – 0039); and preventing increased input signal power from being applied to the power amplifier of the transmitter unit when the direct current of the input signal exhibits the predetermined characteristic (Figure 3, Figure 4, Sections 0034 – 0039).

Buer does not specifically teach a direct current component.

Matsumoto teaches a direct current component (Section 0021 lines 9 – 13).

Buer and Matsumoto both teach the use of amplifiers for the transmission of RF signals in wireless systems thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the direct current component taught in Matsumoto in the transmitter unit of Buer as an alternative means for monitoring the saturation point of an input signal to the amplifier such that optimal uplink power control is achieved.

Regarding Claim 2, Buer in view of Matsumoto teaches all of the claimed limitations recited in Claim 1. Buer further teaches a transmitter unit that comprises a transmitter/receiver (transceiver) unit (Figure 3).

Regarding Claim 3, Buer in view of Matsumoto teaches all of the claimed limitations recited in Claim 1. Buer further teaches the step of preventing increased input signal power from being applied to the power amplifier of the transmitter unit that comprises controlling a level of the input signal within the transmitter unit with an automatic gain or level control circuit (Figure 3, Section 0033 lines 5 – 6).

Regarding Claim 4, Buer in view of Matsumoto teaches all of the claimed limitations recited in Claim 1. Buer further teaches generating a signal indicative of the level of output signal power being produced by the transmitter unit; and transmitting, via the transmitter unit and to a satellite of the satellite-based data

communications system, a signal descriptive of the level of output signal power currently being produced by the transceiver unit (Section 0036, the input signal will be limited such that the amplifier will not be driven into a saturation and/or a non linear range thus there will be optimal transmit power on the uplink).

Regarding Claim 5, Buer in view of Matsumoto teaches all of the claimed limitations recited in Claim 4. Buer further teaches transmitting from the selected element of the satellite-based communications system to the satellite modem a signal for effecting a variation of the level of output signal power being produced by the transmitter unit (Figure 3, the Power Detection Algorithm circuit provides the signal to the modem that causes said modem to vary it's signal output which ultimately varies the output signal power that is transmitted on the uplink).

Regarding Claim 6, Buer in view of Matsumoto teaches all of the claimed limitations recited in Claim 1. Buer further teaches a selected element of the satellite-based communications system that comprises either a satellite or a satellite communications network (Figure 3, the satellite communications network comprises the Power Detection Algorithm circuit).

6. Claims 7 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buer (2002/0132580 A1) in view of Aoki (4,578,633).

Regarding Claim 7, Buer teaches a system for regulating an amount of power provided to a power amplifier of a transmitter unit of a satellite-based data communications system, the system comprising: a modem for delivering a transmission signal to the power amplifier of the transmitter unit and for

regulating an amount of input signal power to be provided to the transmitter unit (Figure 3, Section 0033 lines 1 – 6); a current monitor, in the transmitter unit, for monitoring a level of a direct current provided to the power amplifier of the transmitter unit (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied); and a circuit for preventing an increased amount of power from being provided to the power amplifier of the transmitter unit when the level of the direct current provided to the power amplifier achieves a predetermined threshold (Figure 3, Figure 4, Section 0033 lines 5 – 6, Sections 0034 – 0039, when the current is at a maximum level the P1 dB compression point will be reached, the Automatic Level Control circuit, in conjunction with the Power Detection Algorithm circuit and the current sensor, limits the input power).

Buer does not teach a DC current regulator.

Aoki teaches a DC current regulator (Figure 3, Column 3 lines 48 – 50, this is a current regulator that provides a constant current).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the current regulator taught by Aoki in the transmission system of Buer for the purpose of producing a stable current substantially uninfluenced by fluctuations in the power source voltage as taught by Aoki.

Regarding Claim 8, Buer in view of Aoki teaches all of the claimed limitations recited in Claim 7. Buer further teaches a transmitter unit that comprises a transmitter/receiver (transceiver) unit (Figure 3).

Regarding Claim 9, Buer in view of Aoki teaches all of the claimed limitations recited in Claim 7. Buer further teaches a circuit for preventing an increased amount of input signal power from being applied to the power amplifier that comprises an automatic gain or level control circuit (Figure 3, Section 0033 lines 5 - 6).

Regarding Claim 10, Buer in view of Aoki teaches all of the claimed limitations recited in Claim 7. Buer further teaches a circuit for preventing an increased amount of input signal power from being applied to the power amplifier that comprises a processor that discontinues an operation of the transmitter unit when the level of direct current provided to the power amplifier achieves the predetermined threshold (Section 0043).

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buer (2002/0132580 A1) in view of Aoki (4,578,633) and in further view of Boesch (6,298,244)

Regarding Claim 14, Buer teaches a transmitter unit power control system for use with satellite-based data communications systems, the transmitter unit power control system comprising: a modulator circuit for providing a data signal to a transmitter unit (Figure 3, Section 0033 lines 3 - 4); a power amplifier circuit provided within the transmitter unit for amplifying the data signal and causing the

amplified data signal to be transmitted to a satellite via a radio frequency communications link (Figure1, Figure 3, Section 0020, Section 0030 lines 1 - 3); a DC current source configured to provide a DC current to the power amplifier circuit (Figure 3, Section 0033 lines 2 – 3); a current monitor, provided within the transmitter unit, for monitoring a characteristic of the DC current provided to the power amplifier circuit (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied); a comparator circuit coupled to the current monitor (Figure 3, Figure 5, Sections 0035, 0044, and 0045, the Power Detection Algorithm circuit is comparing the values to the inflection point value, said circuit is coupled to the monitoring circuitry via the current sensor and DC power connection to the ODU); and a telemetry circuit coupled to the comparator and a power regulator circuit associated with the transmitter unit (Figure 2, Figure 3, Section 0011 lines 4 – 7, Section 0031 – 0032, Section 0033 line 5 – 6, the power detection circuitry, which comprises telemetry circuitry, has been moved from the ODU and placed in the IDU thus eliminating the need to transmit the telemetry signal from the ODU back to the IDU for analysis and reducing the cable requirement between the ODU and IDU, said power detection circuitry is coupled to the automatic level control circuitry, which is the power regulator).

Buer does not specifically teach a regulator and a final stage.

Aoki teaches a regulator (Figure 3, Column 3 lines 48 – 50, this is a current regulator that provides a constant current).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the current regulator taught by Aoki in the transmission system of Buer for the purpose of producing a stable current substantially uninfluenced by fluctuations in the power source voltage as taught by Aoki.

Buer in view of Aoki does not teach a final stage.

Boesch teaches a final stage (Column 6 lines 27 – 35).

Buer in view of Aoki and Boesch teach the use of amplifiers for the transmission of RF signals in wireless systems thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the final stage taught in Boesch in the amplifier of Buer in view of Aoki such that there will be optimal amplification of the RF signal on the uplink.

Regarding Claim 15, Buer in view of Aoki and in further view of Boesch teaches all of the claimed limitations recited in Claim 14. Buer further teaches a current monitor that is configured to directly monitor the DC current (Figure 3, the outdoor unit (ODU), which comprises the amplifier, receives DC power from the DC power supply in the indoor unit (IDU) for the purpose of providing the power that said amplifier needs to be operational thus said ODU will comprise monitoring circuitry that determines if the DC power needed by said amplifier has been applied).

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
December 21, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER